

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

- 1           1.       (Previously Presented) A method comprising:  
2                   receiving, into a capacity planning tool executed in a computer system,  
3           configuration information for at least one streaming media server, wherein the configuration  
4           information comprises a single file benchmark and a unique file benchmark for the at least one  
5           streaming media server, wherein the single file benchmark measures a streaming media server  
6           capacity when all clients in a test workload are accessing a single file, and wherein the unique  
7           file benchmark measures the streaming media server capacity when each client in the test  
8           workload is accessing a different file;  
9                   receiving, into said capacity planning tool, workload information for a workload  
10          of client accesses of streaming media files from a server; and  
11                  said capacity planning tool evaluating, based on said configuration information, a  
12          capacity of the at least one streaming media server for supporting the workload.
- 1           2.       (Original) The method of claim 1 wherein said configuration information includes  
2           identification of size of memory of said at least one streaming media server.
- 1           3.       (Original) The method of claim 2 wherein said configuration information further  
2           includes disk configuration of said at least one streaming media server.
- 1           4.       (Original) The method of claim 1 wherein said workload information includes  
2           identification of number of concurrent client accesses of said streaming media files over a period  
3           of time.
- 1           5.       (Original) The method of claim 4 wherein said workload information further  
2           includes identification of a corresponding encoding bit rate of each of said streaming media files  
3           accessed.

1           6.       (Original) The method of claim 1 wherein said workload information comprises  
2       information from an access log collected over a period of time.

1           7.       (Original) The method of claim 1 wherein said evaluating comprises:  
2               computing a cost corresponding to resources of said at least one streaming media  
3       server that are consumed in supporting the workload.

1           8.       (Original) The method of claim 7 wherein said computing said cost comprises:  
2               computing a cost of consumed resources for a stream in said workload having a  
3       memory access to a streaming media file; and  
4               computing a cost of consumed resources for a stream in said workload having a  
5       disk access to a streaming media file.

1           9.       (Original) The method of claim 1 wherein said evaluating comprises:  
2               computing a service demand for said at least one streaming media server  
3       supporting said workload.

10. (Previously Presented) A method comprising:  
receiving, into a capacity planning tool executed in a computer system,  
configuration information for at least one streaming media server;  
receiving, into said capacity planning tool, workload information for a workload  
of client accesses of streaming media files from a server;  
said capacity planning tool evaluating a capacity of the at least one streaming  
media server for supporting the workload;  
wherein said evaluating comprises computing a service demand for said at least  
one streaming media server supporting said workload; and  
wherein said computing said service demand comprises computing:

$$Demand = \sum_{i=1}^{K_W} N_{X_{W_i}}^{memory} \times \cos t_{X_{W_i}}^{memory} + \sum_{i=1}^{K_W} N_{X_{W_i}}^{disk} \times \cos t_{X_{W_i}}^{disk},$$

wherein the workload  $W$  comprises  $X_W = X_1, \dots, X_{k_w}$  set of different encoded bit  
rates of files served in the workload,  $N_{X_{W_i}}^{memory}$  is a number of streams in the workload having a  
memory access to a subset of files encoded at  $X_{W_i}$  Kb/s,  $\cos t_{X_{W_i}}^{memory}$  is a cost of consumed  
resources for a stream having a memory access to a file encoded at  $X_{W_i}$  Kb/s,  $N_{X_{W_i}}^{disk}$  is a number  
of streams in the workload having a disk access to a subset of files encoded at  $X_{W_i}$  Kb/s, and  
 $\cos t_{X_{W_i}}^{disk}$  is a cost of consumed resources for a stream having a disk access to a file encoded at  
 $X_{W_i}$  Kb/s.

11. (Original) The method of claim 1 further comprising:  
receiving at least one service parameter.

12. (Original) The method of claim 11 wherein said at least one service parameter  
comprises information identifying at least one performance criteria desired to be satisfied by said  
at least one streaming media server under the workload.

1           13.     (Original) The method of claim 12 wherein said at least one performance criteria  
2 specifies a minimum percentage of time that said at least one streaming media server is desired  
3 to be capable of supporting the workload.

1           14.     (Original) The method of claim 11 wherein said at least one service parameter  
2 comprises information identifying a constraint.

1           15.     (Original) The method of claim 11 wherein said evaluating further comprises:  
2                 evaluating whether said at least one streaming media server satisfies said at least  
3 one service parameter.

1           16.     (Previously Presented) Computer-executable software code stored to a computer-  
2 readable medium, the computer-executable software code comprising:  
3                 code executable in a computer system for receiving workload information for a  
4 workload of client accesses of streaming media files from a server; and  
5                 code executable in the computer system for employing a cost function derived for  
6 at least one system configuration from a single file benchmark and a unique file benchmark for  
7 evaluating a capacity of the at least one system configuration for supporting the workload,  
8 wherein the single file benchmark measures a streaming media server capacity when all clients in  
9 a test workload are accessing a single file, and wherein the unique file benchmark measures the  
10 streaming media server capacity when each client in the test workload is accessing a different  
11 file.

1           17.     (Previously Presented) Computer-executable software code of claim 16 further  
2 comprising:  
3                 code executable in the computer system for receiving configuration information  
4 for said at least one system configuration.

1           18.     (Original) Computer-executable software code of claim 16 wherein said code for  
2     evaluating a capacity of at least one system configuration for supporting the workload comprises:  
3                 code for determining whether said at least one system configuration is capable of  
4     supporting said workload in accordance with at least one service parameter.

1           19.     (Original) Computer-executable software code of claim 18 wherein said at least  
2     one service parameter comprises information identifying at least one performance criteria desired  
3     to be satisfied by said at least one system configuration under the workload.

1           20.     (Previously Presented) Computer-executable software code of claim 16 further  
2     comprising:  
3                 code executable in the computer system for generating a workload profile for the  
4     received workload information.

1           21.     (Original) Computer-executable software code of claim 20 wherein the received  
2     workload information comprises an access log collected over a period of time.

1           22.     (Original) Computer-executable software code of claim 20 wherein said workload  
2     profile comprises:  
3                 for a plurality of different points in time, identification of a number of concurrent  
4     client accesses, wherein the number of concurrent client accesses are categorized into  
5     corresponding encoding bit rates of streaming media files accessed thereby and are further sub-  
6     categorized into either memory or disk accesses.

1           23.     (Original) Computer-executable software code of claim 16 wherein said code for  
2     evaluating comprises:  
3                 code for generating a service demand profile for said at least one system  
4     configuration.

1           24.     (Original) Computer-executable software code of claim 16 wherein said code for  
2     evaluating a capacity of at least one system configuration comprises:

3                     code for evaluating a capacity of a plurality of different system configurations and  
4     determining an optimal one of said plurality of different system configurations for supporting  
5     the workload.

1           25.     (Previously Presented) A system comprising:

2                     means for receiving configuration information for a plurality of different system  
3     configurations, wherein the configuration information comprises, for each of the plurality of  
4     different system configurations, a corresponding single file benchmark and unique file  
5     benchmark, wherein said single file benchmark measures capacity of the corresponding system  
6     configuration for serving a population of clients that all access a same file, wherein said unique  
7     file benchmark measures capacity of the corresponding system configuration for serving a  
8     population of clients that all access different files;

9                     means for receiving workload information for a workload of client accesses of  
10    streaming media files from a server; and

11                    means for evaluating, based on the configuration information, the capacity of each  
12    of said plurality of different system configurations for supporting said workload.

1           26.     (Original) The system of claim 25 further comprising:

2                     means for determining an optimal one of said plurality of different system  
3     configurations for supporting said workload.

1           27.     (Original) The system of claim 26 wherein said means for determining an optimal  
2     one of said plurality of different system configurations for supporting said workload determines a  
3     most cost-effective one of said plurality of different system configurations for supporting said  
4     workload according to determined service parameters.

1           28.-37. (Canceled)

38. (Previously Presented) The method of claim 1 further comprising:

deriving, by said capacity planning tool, from the single file benchmark and unique file benchmark, a cost function for measuring the capacity of the at least one streaming media server for supporting the workload.

39. (Previously Presented) The method of claim 1 wherein said evaluating comprises computing a service demand for said at least one streaming media server supporting said workload; and

wherein said computing said service demand comprises computing:

$$Demand = \sum_{i=1}^{K_w} N_{X_{w_i}}^{memory} \times cost_{X_{w_i}}^{memory} + \sum_{i=1}^{K_w} N_{X_{w_i}}^{disk} \times cost_{X_{w_i}}^{disk} ,$$

wherein the workload  $W$  comprises  $X_W = X_1, \dots, X_{k_w}$  set of different encoded bit rates of files served in the workload,  $N_{X_{w_i}}^{memory}$  is a number of streams in the workload having a memory access to a subset of files encoded at  $X_{w_i}$  Kb/s,  $cost_{X_{w_i}}^{memory}$  is a cost of consumed resources for a stream having a memory access to a file encoded at  $X_{w_i}$  Kb/s,  $N_{X_{w_i}}^{disk}$  is a number of streams in the workload having a disk access to a subset of files encoded at  $X_{w_i}$  Kb/s, and  $cost_{X_{w_i}}^{disk}$  is a cost of consumed resources for a stream having a disk access to a file encoded at  $X_{w_i}$  Kb/s .

40-43. (Canceled)

1           44.     (Previously Presented) A method executable by a computer system, comprising:  
2                     determining results of a single file benchmark for each of a plurality of encoding  
3     bit rates of a single file served by at least a first streaming media server configuration, wherein  
4     the result of the single file benchmark for a given encoding bit rate identifies the maximum  
5     number of concurrent streams of the single file that the at least a first streaming media server  
6     configuration can supply to a population of clients at the given encoding bit rate;  
7                     determining results of a unique file benchmark for each of said plurality of  
8     encoding bit rates, wherein the result of the unique file benchmark for a given encoding bit rate  
9     identifies the maximum number of concurrent streams of different files that the at least a first  
10    streaming media server configuration can supply to the population of clients at the given  
11    encoding bit rate;  
12                    deriving, from the results of the single file benchmark and unique file benchmark,  
13    a cost function;  
14                    receiving, into a capacity planning tool, workload information for a workload of  
15    client accesses of streaming media files from a server; and  
16                    using, by the capacity planning tool, the cost function for said at least a first  
17    streaming media server configuration for evaluating a capacity of the at least a first streaming  
18    media server configuration for supporting the workload.